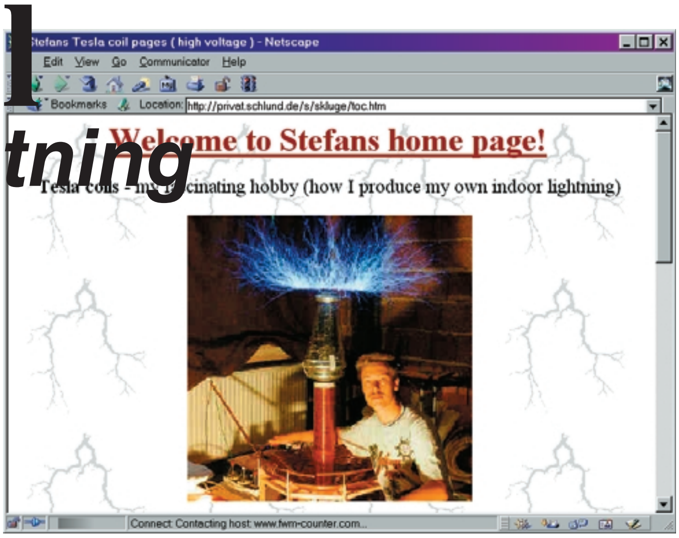
the Tesla coil

make your own lightning

It is unlikely that Nikola Tesla, born in 1856, could have foreseen the widespread interest in his inventions, more than one hundred years later. The Tesla Coil in particular is the subject of many an Internet site.


Stefans Tesla coil pages (high voltage) - Netscape
Edit View Go Communicator Help
Bookmarks Location: http://privat.schlund.de/s/skluge/toc.htm
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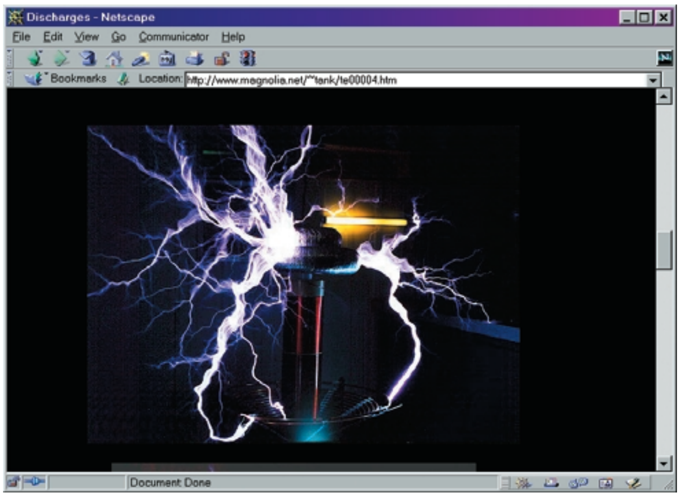
Welcome to Stefans home page!

Tesla coils - my fascinating hobby (how I produce my own indoor lightning)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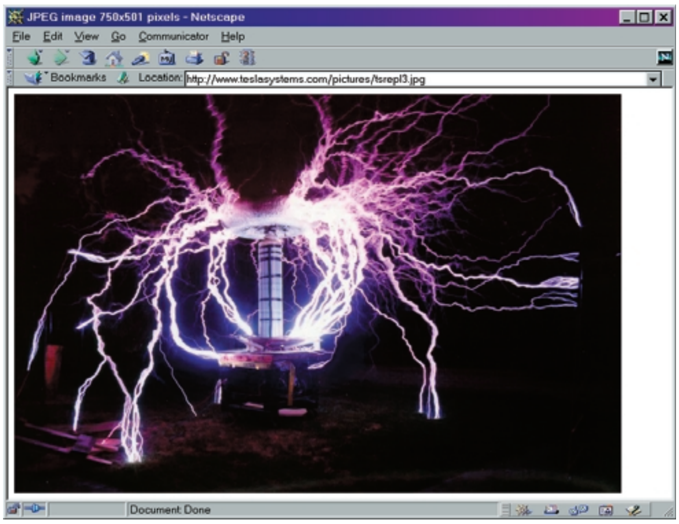
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The idea is simple, really. Make a transformer with a huge step-up ratio, (secondary winding has far more turn than primary winding), and tune both windings to resonance at the same frequency. If, under these conditions, a pulse is applied to the primary winding (for example, by means of a spark), the voltage across the secondary will rise to level at which substantial discharges can be observed, usually in the form of light flashes, arcs and coronas.

Meanwhile, it appears that many hobbyists find pleasure in building such a Tesla transformer, and use it to create wonderful spark showers. Indeed, it has become something like a sport to 'draw' the largest artificial flashes of lightning. Tesla's own record, however, has not yet been broken or even equalled — in 1899, his experimental setup in Colorado Springs produced an arc of 41 metres (approx. 125 ft), wrecking the electricity supply in the whole area.

As an indication of the popularity of the Tesla transformer, there are no fewer than 120 websites connected to the **Tesla Coil Webring** (*http://www.webring.org/cgi-bin/webring?ring=TeslaRing&list*). Alternatively, go to *http://www.webring.org*, and enter the keyword 'tesla'. The site at *http://www.pupman.co*, also has a long list of Tesla-related URLs.

From the long lists we picked some examples for those of you whose curiosity has been aroused. On **Stefan's Tesla pages** at *http://privat.schlund.de/s/skluge/toc.htm* we found an extensive description of the structure of a Tesla coil, complete with lots of tables, diagrams and equations. If you want something a little more practical, we'd say the explanations on **Guy's Tesla Page** (*http://www.pages.vossnet.de/wilson/tesla1.htm*) are a better starting point.

There are also tools available on the Web for the calculation of a Tesla coil. A good collection is found on the **JavaScript Tesla Coil Calculator Page** at *http://www.geocities.com/CapeCanaveral/Hangar/3108/calculat/html*. Provided you enter the right design data everything is calculated for you.

Many sites may be found that show pictures of home-made Tesla coils and the results obtained from them. Great fun to look at! Some nice examples are **Inonized Ether** at *http://www.magnolia.net/~tank/tesla.htm*, and **Chuck Corran's Tesla Coil page** at *http://www.execpc.com/~ccurran/*

Meanwhile a couple of companies have also entered the field. The activities are mostly construction and demonstration. A typical example is **Tesla Systems Research** at *http://www.teslasystems.com*. Very spectacular!

If you want to know more about the great inventor himself, lots of relevant information may be found at *http://members.xoom.com/_XOOM/tastraum/tesla.html* and *http://www.bena.com/lucidcafe/library/96jul/tesla.html*.

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